

Murray and Sunraysia – Algae Alert Status

3 January 2025

This Blue-green algal (BGA) alert report is based on routine monitoring at sites in the Murray & Sunraysia Algae Reporting Area. The sites are monitored by WaterNSW and local water authorities. Satellite imagery may be used to supplement the monitoring data.

Table 1 shows the following red and amber, blue-green algal alerts:

Murray River

Hume Dam as well as the Murray River at Cobram, Tocumwal, Moama, Tooleybuck, Mount Dispersion, Merbein, Curlwaa and Fort Courage are on **Amber** alert for blue-green algae.

Billabong Creek, Edward River & Wakool River

The Gulpa Creek at Mathoura, and Edward River at Old Morago are on **Amber** alert for blue-green algae.

Menindee Lakes and lower Darling River

The Darling River at Wilcannia, Lake Wetherell site 2, Lake Menindee outlet regulator, Darling River at Tolarno, Pooncarie and Ellerslie as well as the Great Darling anabranch at the Silver City Highway Crossing are on **Red** alert for blue-green algae.

Lake Wetherell (sites 3 & 4) as well as Lakes Tandure, Pamamaroo centre and at the outlet, Copi Hollow and Cawndilla outlet regulator are on **Amber** alert for blue-green algae. The Darling River at BHWP and upstream of Weir 32, Burtundy and Tapio are on **Amber** alert for blue-green algae.

Some satellite images are shown on page 4 of this report.

Blue-green algal outlook

In the upper reaches of the catchment near Albury, days are expected to be mostly sunny with showers possible on Monday and Tuesday. Maximum day air temperatures will be between 26 °C and 39 °C with minimum temperatures ranging from 15 °C to 22 °C (Source -[BOM 7-day weather forecast](#)). These conditions are likely to create favourable circumstances for blue-green algal growth.

At Menindee, days are forecast to be sunny to partly cloudy with possible showers on Tuesday. Maximum day air temperatures are expected to be between 28 °C and 41 °C with minimum temperatures ranging from 15 °C to 25 °C. These environmental conditions are expected to create favourable circumstances for blue-green algal growth.

Table 1: Combined Murray and Sunraysia Alerts

| Site | Description | Latest Sample Date | Cyanobacteria Total Count (cells/mL) | Cyanobacteria Biovolume (mm ³ /L) | Potentially Toxic Cyanobacterial Count (cells/mL) | Potentially Toxic Cyanobacterial Biovolume (mm ³ /L) | Current Status (based on Latest Sample) | Previous Status | Cyanobacteria dominant potentially toxic taxa | Cyanobacteria Comments |
|----------------------------|-------------------------------------|--------------------|--------------------------------------|--|---|---|---|-----------------|---|----------------------------------|
| MURRAY RIVER SYSTEM | | | | | | | | | | |
| | Manus Lake (SVC) Lake pontoon | 2/12/2024 | 0 | 0.000 | 0 | 0.000 | No Alert | GREEN | | |
| DLH003 | Lake Hume, Ebden | 16/12/2024 | 381,005 | 0.398 | 3,402 | 0.102 | AMBER | AMBER | <i>Radiocystis sp.</i> | Potentially toxic |
| DLH001 | Lake Hume, Heywoods Bay nr Bethanga | 16/12/2024 | 208,336 | 0.051 | 408 | 0.010 | AMBER | AMBER | <i>Microcystis sp.</i> | Potentially toxic, taste & odour |
| DLH002 | Lake Hume, Hume Dam Resort | 16/12/2024 | 409,497 | 0.300 | 531 | 0.013 | AMBER | AMBER | <i>Microcystis sp.</i> | Potentially toxic, taste & odour |
| DLH004 | Lake Hume, Dam Wall | 16/12/2024 | 378,091 | 0.237 | 735 | 0.018 | AMBER | AMBER | <i>Microcystis sp.</i> | Potentially toxic, taste & odour |
| N1000 | Murray R. Union Bridge Albury | 2/12/2024 | 3,212 | 0.070 | 2,600 | 0.070 | GREEN | No Alert | <i>Phormidium sp.</i> | Potentially toxic, taste & odour |
| N1001 | Murray R. Corowa | 2/12/2024 | 27,832 | 0.045 | 817 | 0.019 | GREEN | No Alert | <i>Microcystis sp.</i> | Potentially toxic, taste & odour |
| | Yarrowonga Weir (outlet) GMW | 2/12/2024 | 38,439 | 2.726 | 0 | 0.000 | AMBER | GREEN | | |
| N1008 | Mulwala Canal Offtake | 19/12/2024 | 23,557 | 0.156 | 0 | 0.000 | GREEN | AMBER | | |
| N1007 | Murray R. @ below Yarrowonga | 19/12/2024 | 23,407 | 0.287 | 1,361 | 0.127 | GREEN | AMBER | <i>Dolichospermum sp.</i> | Potentially toxic, taste & odour |
| N1051 | Murray R. Cobram (Barooga) | 19/12/2024 | 47,300 | 0.625 | 170 | 0.015 | AMBER | AMBER | <i>Dolichospermum sp.</i> | Potentially toxic, taste & odour |
| | Cobram WTP, raw water (GVW) | 19/12/2024 | 40,402 | 1.369 | 534 | 0.037 | AMBER | AMBER | <i>Aphanizomenonaceae family – straight</i> | |
| N1013 | Murray R. Tocumwal | 19/12/2024 | 50,074 | 2.061 | 204 | 0.004 | AMBER | AMBER | <i>Microcystis sp.</i> | Potentially toxic, taste & odour |
| N1052 | Murray R. Picnic Point | 17/12/2024 | 27,433 | 0.266 | 0 | 0.000 | GREEN | AMBER | | |
| | Barmah WTP raw water (GVW) | 30/12/2024 | 60,588 | 4.057 | 655 | 0.175 | AMBER | AMBER | <i>Dolichospermum - coiled (≥6µm)</i> | |
| N1050 | Murray R. Moama (Echuca) | 17/12/2024 | 70,638 | 1.358 | 674 | 0.016 | AMBER | AMBER | <i>Microcystis sp.</i> | Potentially toxic, taste & odour |
| | Torrumbarry Weir GMW | 2/12/2024 | 11,480 | 0.242 | 0.000 | 0.000 | GREEN | GREEN | | |
| N1003 | Murray R. Barham (Koondrook) | 3/12/2024 | 27,103 | 0.101 | 782 | 0.073 | GREEN | No Alert | <i>Dolichospermum sp.</i> | Potentially toxic, taste & odour |
| N1054 | Murray R. Murray Downs (Swan Hill) | 3/12/2024 | 5,444 | 0.017 | 0 | 0.000 | No Alert | No Alert | | |
| | Murray River U/S Woorinen pumps GMW | 16/12/2024 | 6,000 | 0.031 | 0 | 0.000 | No Alert | AMBER | | |
| N1055 | Murray R. Tooleybuc (Piangil) | 3/12/2024 | 25,391 | 0.529 | 68 | 0.001 | AMBER | No Alert | <i>Microcystis sp.</i> | Potentially toxic, taste & odour |
| N1064 | Lake Benanee Rec Area | 4/12/2024 | 0 | 0.000 | 0 | 0.000 | No Alert | No Alert | | |
| N1028 | Murray R. Euston (Robinvale) | 3/12/2024 | 2,840 | 0.106 | 0 | 0.000 | GREEN | AMBER | | |
| N1065 | Murray R. Mount Dispersion | 4/12/2024 | 1,903 | 0.472 | 0 | 0.000 | AMBER | No Alert | | |
| N1062 | Murray R. Buronga | 2/12/2024 | 25,953 | 0.247 | 0 | 0.000 | GREEN | GREEN | | |
| | Merbein (LMW) | 23/12/2024 | 14,607 | 1.189 | 0 | 0.000 | AMBER | GREEN | | |
| N1027 | 414206 - Murray River at Merbein | 3/12/2024 | 23,392 | 0.666 | 1,286 | 0.037 | AMBER | GREEN | <i>Radiocystis sp.</i> | Potentially toxic |
| N1063 | Murray R. Curlwaa | 2/12/2024 | 30,397 | 0.710 | 0 | 0.000 | AMBER | AMBER | | |
| N1066 | Murray R. Fort Courage | 2/12/2024 | 53,322 | 1.966 | 204 | 0.029 | AMBER | GREEN | <i>Anabaenopsis sp.</i> | Potentially toxic |
| | Lock 9 (LMW) | 23/12/2024 | 33,179 | 0.171 | 0 | 0.000 | GREEN | GREEN | | |
| N1077 | Murray R. Lock 8 | 2/12/2024 | 68,400 | 0.150 | 0 | 0.000 | GREEN | GREEN | | |
| N1078 | Lake Victoria Outlet Regulator | 2/12/2024 | 34,489 | 0.068 | 255 | 0.030 | GREEN | No Alert | <i>Dolichospermum sp.</i> | Potentially toxic, taste & odour |

Table 1: Continued

| BILLBONG CREEK, EDWARD & WAKOOL RIVERS | | | | | | | | | | |
|--|-------------------------------------|------------|-----------|--------|--------|-------|----------|----------|-------------------------------|----------------------------------|
| N1020 | Billabong Ck. Walbundrie | 2/12/2024 | 22,704 | 0.024 | 0 | 0.000 | No Alert | No Alert | | |
| N1015 | Billabong Ck. Jerilderie | 2/12/2024 | 1,089 | 0.001 | 0 | 0.000 | No Alert | GREEN | | |
| N1006 | Gulpa Ck. Mathoura | 2/12/2024 | 20,811 | 0.660 | 0 | 0.000 | AMBER | GREEN | | |
| N1002 | Edward R Deniliquin | 2/12/2024 | 25,005 | 0.307 | 0 | 0.000 | GREEN | GREEN | | |
| N1053 | Edward R. Old Morago | 3/12/2024 | 37,814 | 0.592 | 0 | 0.000 | AMBER | No Alert | | |
| N1005 | Edward R. Moulamein | 3/12/2024 | 12,800 | 0.020 | 0 | 0.000 | No Alert | No Alert | | |
| N1010 | Wakool R. Wakool-Barham Road | 3/12/2024 | 28,104 | 0.227 | 0 | 0.000 | GREEN | No Alert | | |
| N1004 | Wakool R. @ Stoney Crossing | 3/12/2024 | 8,540 | 0.091 | 0 | 0.000 | GREEN | No Alert | | |
| N1009 | Wakool R. Kyalite | 3/12/2024 | 7,346 | 0.062 | 2,447 | 0.059 | GREEN | No Alert | <i>Microcystis sp.</i> | Potentially toxic, taste & odour |
| MENINDEE LAKE SYSTEM & LOWER DARLING RIVER | | | | | | | | | | |
| N1042 | Darling River at Wilcannia | 4/12/2024 | 72,454 | 6.022 | 65,860 | 6.015 | RED | AMBER | <i>Dolichospermum sp.</i> | Potentially toxic, taste & odour |
| N1087 | Lake Wetherell Site 1 | 16/12/2024 | 53,620 | 0.112 | 0 | 0.000 | GREEN | No Alert | | |
| N1088 | Lake Wetherell Site 2 | 16/12/2024 | 627,421 | 10.604 | 0 | 0.000 | RED | GREEN | | |
| N1089 | Lake Wetherell Site 3 | 16/12/2024 | 448,953 | 4.152 | 15,553 | 1.953 | AMBER | AMBER | <i>Anabaenopsis sp.</i> | Potentially toxic |
| N1090 | Lake Wetherell Site 4 | 16/12/2024 | 207,162 | 1.253 | 474 | 0.060 | AMBER | AMBER | <i>Anabaenopsis sp.</i> | Potentially toxic |
| N1091 | Lake Tandure Site 8 | 16/12/2024 | 524,392 | 0.898 | 1,633 | 0.207 | AMBER | GREEN | <i>Anabaenopsis sp.</i> | Potentially toxic |
| N1092 | Lake Pamamaroo Inlet (Site 9) | 16/12/2024 | 81,431 | 0.113 | 0 | 0.000 | GREEN | No Alert | | |
| N1129 | 42510013 Centre Pamamaroo (Site 13) | 17/12/2024 | 741,323 | 1.002 | 0 | 0.000 | AMBER | No Alert | | |
| N1093 | Lake Pamamaroo Outlet (Site 10) | 16/12/2024 | 395,277 | 6.794 | 323 | 0.039 | AMBER | No Alert | <i>Dolichospermum sp.</i> | Potentially toxic, taste & odour |
| N1094 | Menindee Lakes, Copi Hollow | 17/12/2024 | 1,049,655 | 1.512 | 0 | 0.000 | AMBER | AMBER | | |
| N1339 | Lake Menindee outlet regulator | 16/12/2024 | 2,729,188 | 63.110 | 19,459 | 2.466 | RED | RED | <i>Anabaenopsis sp.</i> | Potentially toxic |
| N1128 | Lake Cawndilla Site 34 Outlet | 16/12/2024 | 598,319 | 6.164 | 0 | 0.000 | AMBER | AMBER | | |
| N1095 | Darling R. Menindee bhwb pump | 17/12/2024 | 57,016 | 0.978 | 0 | 0.000 | AMBER | GREEN | | |
| N1086 | Darling R u/s Weir 32 | 17/12/2024 | 161,894 | 1.373 | 493 | 0.046 | AMBER | AMBER | <i>Dolichospermum sp.</i> | Potentially toxic, taste & odour |
| N1043 | Darling R. Tolarno | 19/12/2024 | 419,198 | 3.902 | 1,497 | 0.085 | RED | RED | <i>Microcystis sp.</i> | Potentially toxic, taste & odour |
| N1040 | Darling R. Pooncarie | 19/12/2024 | 831,938 | 3.237 | 612 | 0.089 | RED | RED | <i>Anabaenopsis sp.</i> | Potentially toxic |
| N1041 | Darling R. Burtundy | 16/12/2024 | 940,679 | 1.270 | 1,087 | 0.101 | AMBER | AMBER | <i>Dolichospermum sp.</i> | Potentially toxic, taste & odour |
| N1074 | Darling R. Eilerslie | 16/12/2024 | 736,254 | 2.442 | 8,302 | 0.976 | RED | RED | <i>Aphanizomenonaceae sp.</i> | Potentially toxic, taste & odour |
| N1075 | Darling R. Tapio | 16/12/2024 | 945,930 | 1.293 | 816 | 0.076 | AMBER | AMBER | <i>Dolichospermum sp.</i> | Potentially toxic, taste & odour |
| GREAT DARLING ANABRANCH | | | | | | | | | | |
| N1350 | Silver City Hwy | 11/12/2024 | 1,237,771 | 12.618 | 6,260 | 0.748 | RED | No Alert | <i>Dolichospermum sp.</i> | Potentially toxic, taste & odour |

Satellite imagery

The key to the approximate total algae (blue green and non-blue green) concentrations using the Custom Algae Script can be found in Table 3. The actual values can potentially vary by a significant margin due to the geology of the waterbody, species of algae, turbidity, aquatic plants, time of day of the image capture, aerosols in the atmosphere, etc. This variability is a result of the nature of satellite imagery being a large-scale remote sensing format and is not function of the technology or the script itself. For this reason, these colours and descriptors are not the official “**Algae Alert Level**” but rather provides information on the **potential risk on algae formation**.

Table 3: Observed risk levels based on the estimated photosynthetic activity for Custom Algae Script

| Map Colour | Risk Level - | Starting concentration guide range | RACC recreational alert values approx. equivalence |
|------------|--------------|------------------------------------|--|
| Blue | Very low | <0.05 mm ³ /L | No Alert |
| Green | Low | 0.05 to 0.5 mm ³ /L | Green |
| Yellow | Medium | 0.5 to 5.0 mm ³ /L | Amber |
| Red | High | 5.0 to 20.0 mm ³ /L | Red |
| Dark red | Extreme | > 20 mm ³ /L | Red |

Observations about the satellite images

Figure 1 indicates that Hume Dam had mostly very low-level phytoplankton activity on 01/01/2025.

The satellite image of the Menindee Lakes on 02/01/2025 (Figure 2) shows a mix of very low-level and Low phytoplankton activity in lakes Wetherell (sites 3 and 4), Tandure, Pamamaroo and Copi Hollow. Lake Cawndilla had low level algal activity. Phytoplankton activity in Lake Menindee ranged from very low to medium. Weir 32 weir pool had very low to medium phytoplankton activity.

Figure 3 indicates that the Murray River near Wentworth had very low phytoplankton activity on 02/01/2025, while the anabranch appears to have had medium phytoplankton activity. The lower Darling River had very low to medium phytoplankton activity.

Lake Victoria had mostly very low phytoplankton activity on 02/01/2025 (Figure 4).

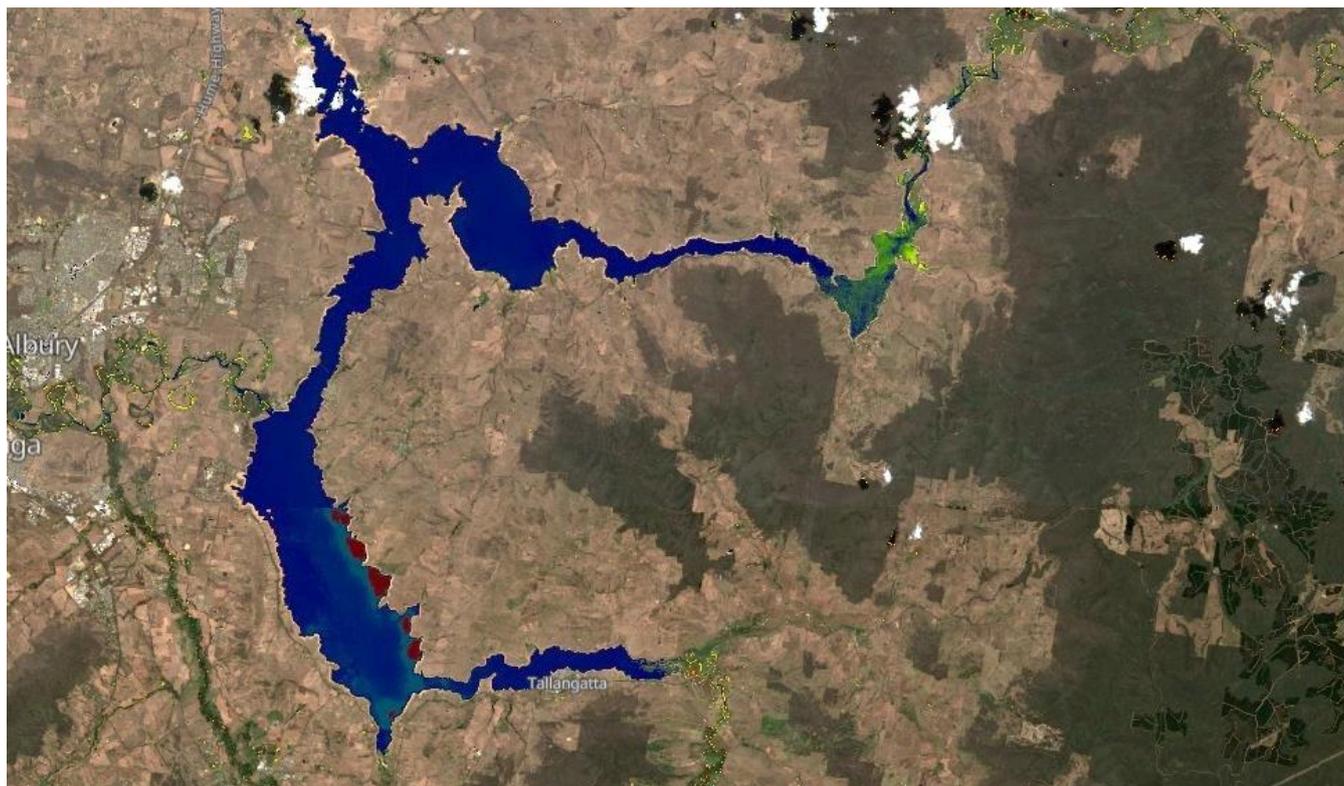


Figure 1: Hume Dam 01/01/2025 SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW.

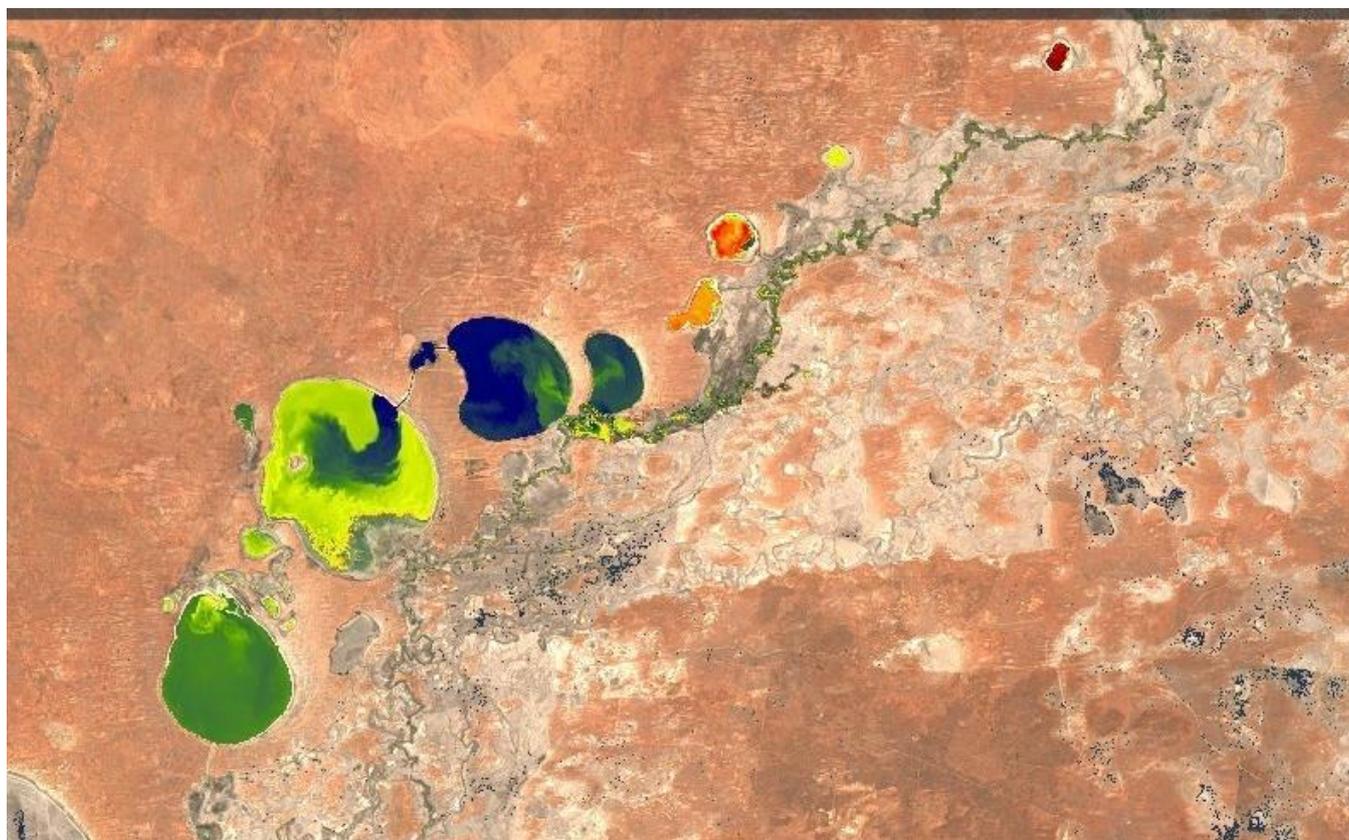


Figure 2: Menindee Lakes 02/01/2025 SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW.



Figure 3: Murray River near Wentworth, Lower Darling River and Great Darling Anabranch 02/01/2025 SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW.

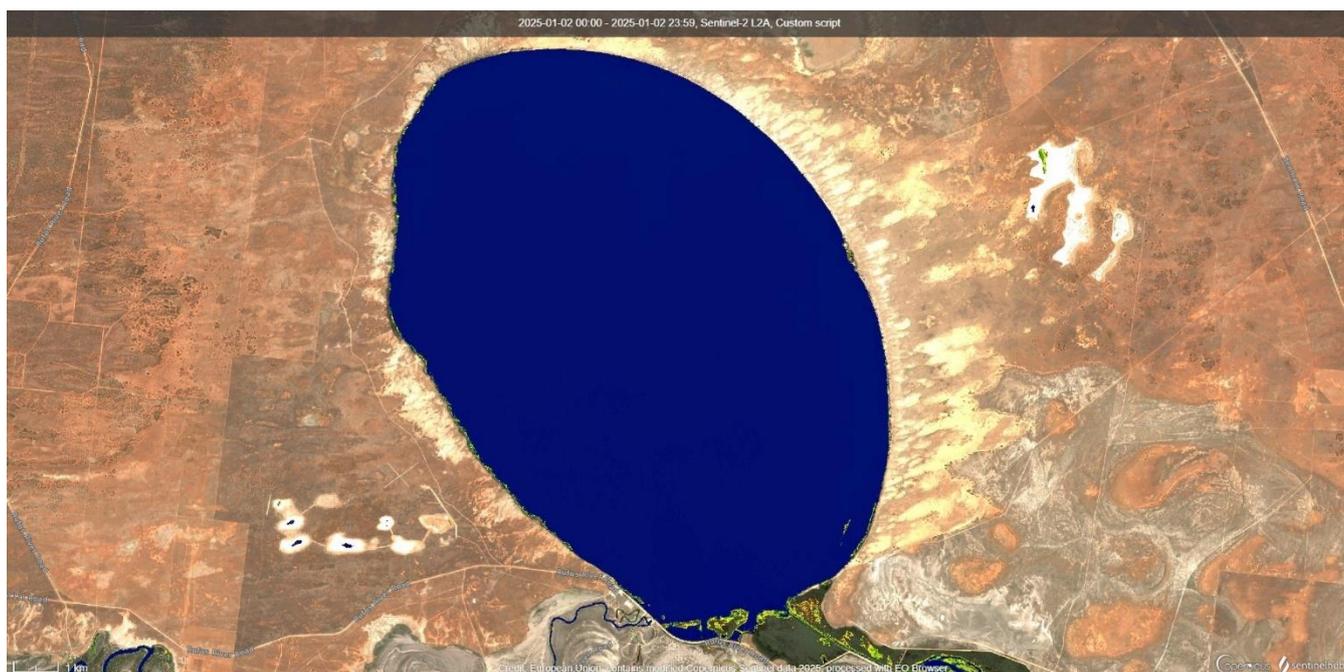


Figure 4: Lake Victoria 02/01/2025 SentinelHub [CC BY-NC 4.0] NSW-Custom Algae Script - TF, WaterNSW.

Alert Definitions for Recreational Waters

Alert Definitions as specified in The National Health and Medical Research Council (NHMRC) *Guidelines for Managing Risks in Recreational Water* 2008.

The interim use of these guidelines is endorsed by the Scientific Subcommittee of the NSW Algal Advisory Group.

RED ALERT

These alert levels represent 'bloom' conditions. Water will appear green or discoloured and clumps or scums could be visible. It can also give off a strong musty or organic odour.

Algae may be toxic to humans and animals. Contact with or use of water from red alert areas should be avoided due to the risk of eye and skin irritation. Drinking untreated or boiled water from these supplies can cause stomach upsets.

Alternative water supplies should be sought or activated carbon treatment employed to remove toxins. People should not fish when an algal scum is present. Owners should keep dogs away from high alert areas and provide alternative watering points for stock.

AMBER ALERT

Blue-green algae may be multiplying, and the water may have a green tinge and musty or organic taste and odour. The water should be considered as unsuitable for potable use and alternative supplies or prior treatment of raw water for domestic purposes should be considered. The water may also be unsuitable for stock watering. Generally suitable for water sports, however people are advised to exercise caution in these areas, as blue-green algal concentrations can rise to red alert levels quickly under warm, calm weather conditions.

GREEN ALERT

Blue-green algae occur naturally at low numbers. At these concentrations, algae would not normally be visible, however some species may affect taste and odour of water even at low numbers and does not pose any problems for recreational, stock or household use.

Key to Alerts for Recreational Waters

| | |
|---|--|
| <p>RED Alert $\geq 50\,000$ cells/mL toxic <i>M. aeruginosa</i> OR biovolume equivalent of ≥ 4 mm³/L for the combined total of all cyanobacteria where a known toxin producer is dominant in the total biovolume OR The total biovolume of all cyanobacteria ≥ 10 mm³/L OR Cyanobacterial scums are consistently present</p> | <ul style="list-style-type: none"> • High levels of Blue Green Algae detected • Indicates “bloom” conditions • Toxicity should be presumed • Water will appear green or brownish and may have a strong musty taste and odour • Surface scums could occur • Extreme care should be exercised, and contact with the water should be avoided <p>Action</p> <ul style="list-style-type: none"> • Issue Media Release • Water supply authorities to increase filtering with activated carbon as appropriate • Local authority and health authorities to warn the public that the water body is unsuitable for primary contact recreation |
| <p>AMBER Alert $\geq 5\,000$ to $< 50\,000$ cells/mL <i>M. aeruginosa</i> OR biovolume equivalent of ≥ 0.4 to < 4 mm³/L for the combined total of all cyanobacteria where known toxin producers are dominant in the total biovolume OR ≥ 0.4 to < 10mm³/L combined total for all blue-green algae where known toxin producers are not dominant</p> | <ul style="list-style-type: none"> • Indicates blue-green algae are multiplying • Water may have a green tinge and musty taste and odour <p>Action</p> <ul style="list-style-type: none"> • Water supply authorities to consider filtering with activated carbon • Investigations into the causes of the elevated levels and increased sampling to enable the risks to recreational users to be more accurately assessed. |
| <p>GREEN Alert > 500 to $< 5\,000$ cells/mL <i>M. aeruginosa</i> OR biovolume equivalent of > 0.04 to < 0.4 mm³/L for the combined total of all cyanobacteria</p> | <ul style="list-style-type: none"> • Low levels of potentially toxic species detected – suggesting base crop of blue green algae may be on the increase <p>Action</p> <ul style="list-style-type: none"> • Continue/increase routine sampling to measure cyanobacterial levels |

Livestock Drinking Water Guidelines Based on ARMCANZ (2000), Orr and Schneider (2006) and WQRA (2010)

This guideline should be used when water is used for livestock drinking water purposes.

- If visual scums are present, then a High alert should be declared. This would be applicable for both farm dams and publicly managed water bodies (streams, rivers, etc). Such advice should also be given to farmers who phone the department seeking information on managing blooms in their dams.
- Where blooms dominated by *Microcystis aeruginosa* are present, then the ANZECC/ARMCANZ (2000) guideline of 11,500 cells/mL should be used. Excess of this cell count will constitute a **High alert**.
- Where blooms dominated by *Dolichospermum circinale* are present, then the Orr and Schneider (2006) guideline of 25,000 cells/mL should be used. Excess of this cell count will constitute a **High alert**.
- **Blooms of blue-green algae other than *M. aeruginosa* and *D. circinale*** are also common in NSW. These can be of either known potentially toxic species, or of species not considered to be toxin producers. When these blooms are present, a total blue-green algal biovolume in excess of 6 mm³/L will constitute a **High alert**. (These are based on Very High alert recommendations for raw water sourced for potable human supply published by WQRA (2010), in lieu of there being nothing else available).

Further Information and Contacts

Links to websites of VIC and other agencies

[Link to Snowy Valleys Council](#)

[Link to North East Water](#)

[Link to Goulburn-Murray Water blue-green algal alerts](#)

[Link to Goulburn Valley Water blue-green algal information](#)

[Link to Lower Murray Water blue-green algal alerts](#)

Go to the WaterNSW Algal Website

www.watarnsw.com.au/algae or at WaterInsights:

Murray regulated river - <https://waterinsights.watarnsw.com.au/11904-new-south-wales-murray-regulated-river/updates>

Lower-Darling regulated river - <https://waterinsights.watarnsw.com.au/12104-lower-darling-regulated-river/updates>

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